

REMARKS

Applicants appreciate the thorough examination of the present application that is reflected in the Official Action of August 4, 2003. Applicants respectfully submit, however, that the claims are neither anticipated by nor obvious in view of the prior art publication by the assignee of the present application for the reasons that will be described in detail below. Accordingly, Applicants respectfully request allowance of the present application in view of the present amendments and the following remarks.

The Rejections Under 35 USC § 112 Have Been Overcome

Claims 2, 26, and 48 have been amended to provide the full names of TEDPHA and TEXPHA as suggested by the Examiner. Accordingly, the rejections under 35 USC § 112, second paragraph have been overcome. The specification also has been amended to eliminate specific references to Figure 7-13, which apparently were not filed with the present application. The detailed description of the figures in the specification has been retained. Since these figures were merely examples of screen displays that may be used in embodiments of the present invention, the screen displays themselves are not necessary to satisfy 35 USC § 112.

Claims 1-4, 7, 10, 11 and 17-22 are not Anticipated by Herrington

Claims 1-4, 7, 10, 11 and 17-22 were rejected under 35 USC § 102(b) as being anticipated by the 1996 publication by Edwin F. Herrington, III entitled *A Team-Based Approach to Mechanical Integrity Implementation*, hereinafter "Herrington." However, Applicants respectfully submit that Herrington does not describe many of the elements of Claim 1.

More specifically, Claim 1 recites a method of conducting a Process Hazard Analysis (PHA) comprising a series of steps that are performed in a data processing system. The first step is "selecting a chemical process to be evaluated." In order to allow a chemical process to be selected, a plurality of processes may be stored in the data processing system so that a chemical process to be evaluated may be selected.

Claim 1 also recites "selecting a study type to be performed on the chemical process." In order to allow selection of the study type to be performed on the chemical process, a plurality of study types may be stored in the data processing system. Figure 3 describes specific examples of selecting a study type to be performed on the chemical process. New dependent Claims 69-74 have been filed to highlight the storing of a plurality of study types and/or chemical processes in the data processing system.

Claim 1 also recites:

conducting the selected study type on the chemical process,
wherein the chemical process is evaluated for the presence of a hazard
scenario; and then
generating a resolution plan to the hazard scenario.

In contrast, Herrington describes *A Team-Based Approach to Mechanical Integrity Implementation* as noted in the Herrington title. Herrington notes that Mechanical Integrity (MI) is posing a major challenge for chemical and petrochemical companies affected by OSHA's Process Safety Management (PSM) regulation. See the first sentence of Herrington. Herrington then proposes a team-based approach to mechanical integrity implementation. More specifically, Herrington notes that when a Process Hazard Analysis (PHA) team has been put together to perform PHA on a process, they may be the most qualified to also implement a mechanical integrity program. See, for example, the paragraph bridging pages 111 and 112 of Herrington:

After trying a number of approaches to actually doing the classification of individual items, it was decided that members of the Process Hazard Analysis (PHA) team would be best qualified to make this call. So, for all processes for which the PHA had been completed, knowledgeable experts from the PHA team were given training on the MI classification process, and they used this training, the PHA results, and their judgment to make the classifications. In cases where the PHA had not yet been performed, operations personnel developed "preliminary critical lists" which are then reviewed and revised later, once the PHA is completed. (Emphasis added.)

Although Herrington provides insight on how to assemble a team-based approach for mechanical integrity implementation, Herrington does not describe or suggest that any of the following steps of Claim 1 can be performed in a data processing system, as recited in Claim 1:

1. A method of conducting a process hazard analysis (PHA), comprising the following steps that are performed in a data processing system:
 - selecting a chemical process to be evaluated;
 - selecting a study type to be performed on the chemical process;
 - conducting the selected study type on the chemical process,wherein the chemical process is evaluated for the presence of a hazard scenario; and then
 - generating a resolution plan to the hazard scenario.

Paragraph 8 of the Official Action rejects Claim 1 as being anticipated by Herrington as follows:

Herrington discloses a method for using the Tennessee Eastman Division Process Hazard analysis (TEDPHA) for studying the Mechanical Integrity program in compliance with OSHA's PSM regulation (1910.119) (page 110, column 1, lines 22-25) to ensure that process equipment containing and controlling highly hazardous chemicals is maintained to high standards which minimizes the chances of accidental release and subsequent injuries or accidents (Abstract etc.; page 110, column 1, lines 7-11; column 2, lines 8-14). The method comprises charging each to define the types and frequencies of inspections and develop guidelines for correcting deficiencies (page 111, column 1, lines 15-19), as in instant claims 1-3.

For the sake of argument, Applicants concede that Herrington discloses what is described above in Paragraph 8 of the Official Action. However, this disclosure does not appear to bear any relationship to the elements of Claim 1. Moreover, the passages of Herrington that were cited in the above-quoted paragraph of the Official Action also do not appear to be of any relationship to the elements of Claim 1. In particular, page 110, column 1, lines 22-25 of Herrington states:

The company has been actively engaged in compliance efforts for OSHA's Process Safety Management regulation (1910.119) for over four years.

The Abstract of Herrington states:

The U.S. Occupational Safety and Health Administration (OSHA) promulgated the Process Safety Management of Highly Hazardous Chemicals standard (29 CFR 1910.119) in 1992. One key provision of the regulation calls for a Mechanical Integrity (MI) program to ensure that process equipment containing and controlling highly hazardous chemical is maintained to high standards, standards which minimize the chances of accidental release and subsequent injuries or incidents. This article addresses the approach taken by Tennessee Eastman Division in the implementation of the OSHA MI requirements.

Page 110, column 1, lines 7-11 states:

Implementation at Eastman Chemical Company's Tennessee Eastman Division in Kingsport confirms that assessment, but the division's program is now in an advanced state and has provided many learning experiences from which others may benefit.

Page 110, column 2, lines 8-14 states:

The steering team also included the coordinator responsible for overall PSM implementation within the division, to ensure that the MI program integrated well with other major PSM activities underway, activities such as the development of Process Safety Information and the Process Hazard Analyses being performed. Figure 1 shows the MI teams organization.

Finally, page 111, column 1, lines 15-19 states:

The charge to these teams included not only defining the types and frequencies of inspections but also the development of a process for the correction of deficiencies and the preparation of guidelines for training and qualifying inspectors.

None of these passages describe or suggest the recitations of Claim 1:

1. A method of conducting a process hazard analysis (PHA), comprising the following steps that are performed in a data processing system:
 - selecting a chemical process to be evaluated;
 - selecting a study type to be performed on the chemical process;
 - conducting the selected study type on the chemical process,wherein the chemical process is evaluated for the presence of a hazard scenario; and then
generating a resolution plan to the hazard scenario.

Applicants respectfully submit that anticipation requires that each and every element of the claim is found in a single prior art reference. *W. L. Gore & Associates Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1554, 220 U.S.P.Q. 303, 313 (Fed. Cir. 1983). Stated another way, all material elements of a claim must be found in one prior art source. *In re Marshall*, 198 U.S.P.Q. 344 (C.C.P.A 1978). "Anticipation under 35 U.S.C. § 102 requires the disclosure in a single piece of prior art of each and every limitation of a claimed invention." *Apple Computer Inc. v. Articulate Systems Inc.* 57 USPQ2d 1057, 1061 (Fed. Cir. 2000). A finding of anticipation further requires that there must be no difference between the claimed invention and the disclosure of the cited reference as viewed by one of ordinary skill in the art. *See Scripps Clinic & Research Foundation v. Genentech Inc.*, 927 F.2d 1565, 1576, 18 U.S.P.Q.2d 1001, 1010 (Fed. Cir. 1991).

For at least these reasons, Claim 1 is not anticipated by Herrington. Claims 2-4, 7, 10, 11, and 17-22 are patentable at least as depending from patentable Claim 1.

Moreover, many of these dependent claims are independently patentable. For example, Claim 10 recites:

10. The method of Claim 1, further comprising the step of customizing the study type prior to the conducting step.

Thus, a customization of the study type is performed in the data processing system prior to the conducting step. This customization is described, for example, in the flow charts of Figure 2. Although Claim 10 was rejected as being anticipated under 35

USC § 102(b) in view of Herrington, the anticipation rejection also cites OSHA Document 57:6356 at Paragraph 10 of the Official Action.

Applicants respectfully submit that the combination of Herrington and OSHA Document 57:6356 is not a proper basis for an anticipation rejection as an anticipation rejection requires that all of the limitations of the claims be disclosed in a single reference. Nonetheless, in order to advance prosecution of the present application, Applicants respectfully submit that the combination of Herrington and the OSHA Document 57:6356 do not describe or suggest the recitations of Claims 10 or 11. In particular, assume for the sake of argument that

OSHA Document 57:6356 as directed to 29 CFR § 1910.119 discloses many businesses develop custom checklists or what-if questions as part of their PHA to determine which PHAs to conduct first . . .

as stated in Paragraph 10 of the Official Action. This "disclosure" would still not describe "the step of customizing the study type prior to the conducting step" as recited in Claim 10. In particular, this "disclosure" would not suggest that a study type may be selected as recited in Claim 1 and then customized in the data processing system prior to conducting the selected study type. Accordingly, Claim 10 is independently patentable. Claim 11 is patentable at least as depending from Claim 10.

Moreover, since the rejection of Claims 10 and 11 appears to combine references in a rejection under 35 USC § 102(b), Applicants respectfully request the Examiner to withdraw this rejection and issue a new non-final rejection if the present application is not in condition for allowance, so that Applicants are provided an opportunity to respond to a proper rejection under 35 USC § 102(b) or a new rejection under 35 USC § 103(a).

Claims 1-68 are Patentable Under 35 USC § 103(a)

Claims 1-68 were rejected under 35 USC § 103(a) as being unpatentable over Herrington in combination with U.S. Patent 5,950,217 to Heinlein et al. taken with

OSHA 61:57646-56856, November 4, 1996. Applicants respectfully submit, however, that these claims are patentable over this combination of references for the reasons that will now be described.

Claims 1-4, 7, 10, 11 and 17-22 were rejected at Paragraph 18 because:

Herrington discloses the limitations to Claims 1-4, 7, 10, 11 and 17-22 as discussed above.

However, Applicants have shown above that Herrington does not describe or suggest the recitations of independent Claim 1 and that Claims 10 and 11 are independently patentable. These analyses will not be repeated for the sake of brevity.

Nor would it be obvious to modify Herrington to provide the recitations of Claim 1. In particular, to establish a *prima facie* case of obviousness, the Patent Office must satisfy three requirements. First, the prior art reference or combination of references must teach or suggest all of the limitations of the claims. *See In re Wilson* 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970) ("All words in a claim must be considered in judging the patentability of that claim against the prior art"). Importantly, the teachings or suggestions must come from the prior art, not from the Applicants' disclosure. *See In re Vaeck*, 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991). Second, the prior art relied upon, coupled with the knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or to combine references. *In re Oetiker*, 24 USPQ2d 1443, 1446 (Fed. Cir. 1992); *In re Fine*, 837 F.2d at 1074; *In re Skinner*, 2 USPQ2d 1788, 1790 (Bd. Pat. App. & Int. 1986). Third, the proposed modification or combination of the prior art must have a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *See Amgen, Inc. v. Chugai Pharm. Co.*, 927 F.2d 1200, 1209, 18 USPQ2d 1016, 1023 (Fed. Cir. 1991).

As emphasized by the Court of Appeals for the Federal Circuit, to support combining references, evidence of a suggestion, teaching, or motivation to combine must be clear and particular, and this requirement for clear and particular evidence is

not met by broad and conclusory statements about the teachings of references. *In re Dembiczak*, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). In an even more recent decision, the Court of Appeals for the Federal Circuit has stated that, to support combining or modifying references, there must be particular evidence from the prior art as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed. *In re Kotzab*, 55, USPQ2d 1313, 1317 (Fed. Cir. 2000).

It would not be obvious to modify Herrington to provide the recitations of Claim 1 because Claim 1 is directed to a method of conducting a PHA in a data processing system, whereas Herrington is directed to *A Team-Based Approach to Mechanical Integrity Implementation* as noted in the Herrington title. As was described above, Herrington's thrust is described in the paragraph bridging Herrington pages 111-112 as follows:

After trying a number of approaches to actually doing the classification of individual items, it was decided that members of the Process Hazard Analysis (PHA) team would be best qualified to make this call. So, for all processes for which the PHA had been completed, knowledgeable experts from the PHA team were given training on the MI classification process, and they used this training, the PHA results, and their judgment to make the classifications. In cases where the PHA had not yet been performed, operations personnel developed "preliminary critical lists" which are then reviewed and revised later, once the PHA is completed. (Emphasis added).

Therefore, there is no suggestion in Herrington to modify Herrington to conduct the steps of Claim 1 in a data processing system. Accordingly, Claim 1 and dependent Claims 2-24 are patentable over Herrington taken alone or in combination with any other reference.

Moreover, there are separate grounds for patentability of the remaining claims based on the rejections of Paragraphs 20-28 of the Official Action. These rejections will be addressed in the order in which they were presented in Paragraphs 20-28.

In Paragraph 20, the Official Action rejected Claims 5, 6, 29 and 31 based on Herrington in view of Heinlein et al. Applicants respectfully submit, however, that

these claims are patentable at least per the patentability of independent Claims 1 and 25 from which they depend. The patentability of independent Claim 25 will be discussed below in connection with Paragraph 22.

In Paragraph 21, Claims 23, 24, 45, 46, 67, and 68 were rejected as being obvious in view of Herrington and the Abstract of Heinlein et al. However, method Claims 23 and 24 recite:

23. The method of Claim 1, further comprising the step of generating a resolution database after the step of generating the resolution plan.

24. The method of Claim 23, wherein the resolution database comprises one or more parameters selected from the group consisting of the names of persons responsible for carrying out the resolution plan, departments responsible for carrying out the resolution plan, sites at which the resolution plan will be carried out, target dates for completion of the resolution plan, completed action items, and uncompleted action items.

Claims 45-46 and 67-68 are system and computer program product analogs of methods Claims 23 and 24. Heinlein relates to a *Computer Network System and Method for Process Safety Management (PSM) Including Facilitated Display and Multiple Participant Work Stations* as noted in the Heinlein et al. title. As noted in the Heinlein et al. Abstract:

A computer network for gathering information and reaching consensus in a multi-user collaborative environment for Process Safety Management (PSM). Comments and ideas are gathered simultaneously from team members in a meeting, using the network. Apparatus is provided for storing these inputs and retrieving them from a database, and for printing them in predefined formats. The system provides for team members to submit their ideas anonymously in a meeting so that people uncomfortable with speaking in front of a group can freely share their ideas. The system automatically records input so ideas are not lost or misrecorded. The input is converted from the first database into a format for word processing to produce the required documents, into a format for a project management system to schedule the work to complete PSM documentation, and into a format to produce flow changes to the process being analyzed. (Emphasis added).

Accordingly, Heinlein et al. provides mechanisms for capturing user ideas for PSMs from users who may be uncomfortable with speaking in front of a group. Heinlein et al. does not describe or suggest the generation of a resolution plan for a hazard scenario as recited in Claim 1, the generation of resolution database as recited in Claim 23, or the details of the resolution database as recited in Claim 24. Accordingly, these claims are independently patentable.

At Paragraph 22, independent Claims 25 and 47 were rejected based on Herrington in combination with Heinlein et al. Claims 25 and 47 are system and computer program analogs of independent Claim 1. The rejection states:

Heinlein et al. discloses a system and computer program for performing the methods discussed above (column 4, lines 14-67 to column 5, lines 1-11 and claims 1-5), as in instant claims 25 and 47.

However, Heinlein et al. does not disclose a system and computer program for performing the methods of Claims 25 and 47 because Heinlein et al. describes a system and computer program for gathering information and reaching consensus in a multi-user collaborative environment for PSMs. Heinlein et al.'s column 4, lines 14-67 to column 5, lines 1-11 describe details of a central processing unit, LCD displays, printers, network server computers, and the like. However, this system and computer program do not provide:

25. A data processing system for conducting a process hazard analysis, comprising:
 means for selecting a chemical process to be evaluated;
 means for selecting a study type to be performed on the chemical process;
 means for conducting the selected study type on the chemical process, wherein the chemical process is evaluated for the presence of a hazard scenario; and
 means for generating a resolution plan to the hazard scenario.

as recited in Claim 25 or analogous computer program products as recited in Claim 47.
Rather, as recited in Heinlein et al. Claim 1, Heinlein et al.'s system and computer program provide:

A computer network system implementing a project safety management (PSM) standard, comprising:

a facilitator workstation with a facilitator display and data input means for inputting data into the system;

multiple participant workstations with participant displays and data input means for inputting data anonymously into the system, and each workstation having means to control the functions of the workstation;

team display means communicating with the facilitator workstation for displaying several thousand characters of text simultaneously to a plurality of participants;

network means for communication between the facilitator workstation and a plurality of the participant workstations;

automatic means to control the communication between the facilitator workstation and a plurality of the participant workstations, and to control the functions of the facilitator workstation;

collection means to automatically collect data from a plurality of participant workstations simultaneously input at a plurality of input means and to display the received data simultaneously to a plurality of participants, and to provide for revising the data to resolve any inconsistencies in the received data and to reach consensus;

database means for storing and retrieving data;

means for categorizing and organizing the data collected from the participants by the collection means and transmitting the organized data to the database means;

word processing means for additional input and organization of the data transmitted to the data base into one or more documents;

means for retrieving the data from the database and further organizing the data for use in the word processing means; and

programmed means for retrieving pre-loaded organizational unit descriptions that others have used to achieve compliance with the PSM standard, and which are loaded with such descriptions, and for displaying the organizational unit descriptions using team display means and for storing a selection of organizational units selected by input into member workstations for implementing the PSM standard.
(Emphasis added).

Nor would it be obvious to combine Heinlein et al. with Herrington because Herrington relates to *A Team-Based Approach to Mechanical Integrity Implementation* (see the Herrington title) whereas Heinlein et al. relates to *Computer Network System and Method for Process Safety Management Including Facilitator Display and Multiple Participant Workstations* (see the Heinlein et al. title). Moreover, even if combined, Heinlein et al.'s computer network and computer program would be used to gather information and receive consensus in a multi-user collaborative environment, for use in mechanical integrity implementation. The combination would not provide the recitations of Claims 25 or 47. For at least these reasons, Claims 25 and 47 are patentable over Herrington in view of Heinlein et al.

In Paragraph 23, Claims 26, 27, 32, 35, 36, 38-44, 48, 49, 54, 57, 58 and 60-66 were rejected based on the combination of Herrington and Heinlein et al. Applicants respectfully submit that these claims are patentable at least per the patentability of the independent claim from which they depend. Moreover, many of these claims are independently patentable. In particular, Claims 35 and 36 are patentable for the same reasons that were described above in connection with Claims 10 and 11. This analysis will not be repeated for the sake of brevity. Similar analysis applies to Claims 57 and 58.

In Paragraph 24, Claims 8, 9, 12, 33, 34, 37, 55, 56, and 59 were rejected in further view of OSHA 61:56746-56856. However, these claims are patentable at least per the patentability of the independent claim from which they depend. Moreover, many of these claims are independently patentable. In particular, Claim 9 recites:

The method of Claim 8, wherein the generation of a risk ranking comprises the analysis of a risk matrix.

As noted in the present application, for example, at page 14, lines 7-15:

A "risk matrix" may be used to determine the risk ranking of a process or node. A risk matrix is a matrix or table that, for example, sets forth both the relative severity of a hazard (on one axis of the matrix) in relation to its potential frequency of occurrence (on another axis). In the practice of the present invention the user may customize

the size of the matrix by choosing the number of entries on each axis of the matrix (*i.e.*, may select the number of columns and rows of the table). A risk matrix can be used to provide guidelines for accepting or not accepting the analyzed frequency and consequence of the potential chemical hazard.

Assuming for the sake of argument that OSHA 61:56746-56856 discloses:

... a method of studying of employee exposure to a hazardous chemical such as 1,3-Butadiene by determining the risk of exposure (page 27, lines 21-22) and ranking the job in accordance with exposure, and develop a job-exposure matrix (page 28, lines 13-17)

as alleged in Paragraph 24, there would still be no suggestion of providing a risk matrix as recited in Claim 9 and defined in the present application. Accordingly, Claim 9 is independently patentable. Similar analysis applies to Claims 12, 37, 56 and 59.

In Paragraph 25, Claims 13 and 14 also were rejected. However, Claims 13 and 14 are patentable at least per the patentability of Claim 12 from which they depend.

In Paragraph 26, the Official Action appears to provide an alleged "motivation" to combine Herrington and Heinlein et al. Applicants respectfully submit that this is not the particular type of motivation that is required under the MPEP and the case law described above. Moreover, as was already described, even if combined, Heinlein et al. in view of Herrington would provide a computer system for gathering responses in a mechanical integrity test, rather than the recitations of Claims 1-68. Similar rationale applies to the "motivation" that is quoted in Paragraph 27.

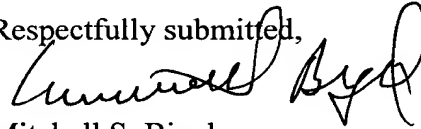
CONCLUSION

Applicants again appreciate the thorough analysis that was provided in the lengthy and detailed Official Action. However, Applicants have now shown that the recitations of the independent claims are not described or suggested in the cited

In re: Christine E. Browning et al.
Serial No.: 09/670,214
Filed: September 25, 2000
Page 30 of 30

references or their combination, and that many of the dependent claims are separately patentable. Accordingly, Applicants respectfully request allowance of the present application and passing the application to issue. Moreover, if the application is not deemed in condition for allowance, a new non-final rejection is respectfully requested which provides an anticipation rejection based only on a single reference, or a new obviousness rejection based on a combination of references.

Respectfully submitted,



Mitchell S. Bigel
Registration No. 29,614
Attorney for Applicants

USPTO Customer No. 20792
Myers Bigel Sibley & Sajovec
Post Office Box 37428
Raleigh, North Carolina 27627
Telephone: 919/854-1400
Facsimile: 919/854-1401

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on November 3, 2003.



Susan E. Freedman
Date of Signature: November 3, 2003